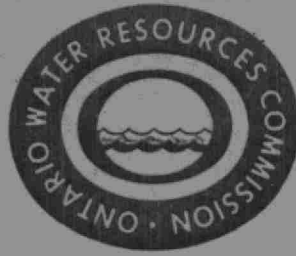


Sydenham R.



THE
ONTARIO WATER RESOURCES
COMMISSION

WALLACEBURG - LANDFILL

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ONTARIO WATER RESOURCES COMMISSION

REPORT ON FIELD INVESTIGATIONS

DATE OF EXAMINATION - June, 1971. PLACE - Town of Wallaceburg

MATTER INVESTIGATED - Alleged Ground Water Pollution by Leachate
from a Sanitary Landfill Site.

AT REQUEST OF - The Hon. George A. Kerr, Minister,
Department of the Environment.


INSPECTION MADE IN COMPANY WITH - B. Macdonald, Technician,
Surveys and Projects Branch.

OTHER PARTIES SEEN - Mrs. A. Benoit

REPORTS TO BE SENT TO -	J. C. Thatcher	Dr. E. G. Brown, MOH,
	F. A. Voegel	21 Seventh St., Chatham.
	K. E. Symons	
	W. Williamson	W. E. Jones, Clerk,
	J. R. Barr,	Town of Wallaceburg,
	Attn: J. Timko	Municipal Building.
	J. R. Bray (London)	
	Surveys and Projects (3)	Mrs. A. Benoit,
	Central Records	Balloon Rd., Wallaceburg.

OTHER RECOMMENDATIONS TO THE OFFICE RE PROCEDURE TO FOLLOW -

REPORT BY


F. R. Campbell, Geologist.

NOTE: This completed form to be attached to each report.

REPORT

Ontario Water Resources Commission

Municipality..... Town of Wallaceburg..... Date of Inspection..... June, 1971.
Re:..... Alleged Ground Water Pollution by Leachate from a Sanitary Landfill Site
Field Inspection by..... F. R. Campbell and B. Macdonald..... Report by..... F. R. Campbell

INTRODUCTION

In response to a complaint from Mrs. A. Benoit of Wallaceburg, to the Hon. G. A. Kerr, Q.C., Minister, Department of the Environment, the Division of Water Resources conducted an investigation to determine the effects of the Wallaceburg sanitary landfill operation on ground-water quality.

In August, 1967, the Division of Water Resources commented on the hydrogeologic suitability of the Wallaceburg landfill site. It was noted that a water-table aquifer is contained in an 8-foot thick fine-grained surficial sand deposit in the area and that the trenching operations proposed for the site would expose the aquifer. It was stated that any shallow wells terminating in the upper sand near the site would be in a hazardous position. The site was operated under a temporary permit which expired in July, 1971. Operations at the site have been continued without a permit.

The 12-acre site has been operated for approximately three years in the following manner: (1) a trench is dug roughly 80 feet long and 20 feet wide to a depth of 15 feet; (2) domestic garbage is dumped into the trench and fine sandy soil is used to cover the garbage;

(3) a single lift is then completed on top of the filled pit and another trench is put into operation.

The water-table in the area is usually within 3 feet of the ground surface. Surface drainage off the raised landfill is not contained but flows to adjacent roadside ditches and has reportedly flooded nearby properties during periods of high-water conditions.

GEOLOGY

The landfill site is located on a sand plain at the southwestern extreme of Wallaceburg. The area is flat, lying between elevations of 576 and 580 feet above mean sea level. The surficial sands at the site may be associated with depositional activity on the flood plain of the Sydenham River. A clay loam to sandy loam soil has been developed on this parent material. The drainage of these soils is relatively poor with flooding conditions being experienced after heavy rains.

A 70-foot thick section of soft clay underlies the surficial sands and overlies a sand and gravel deposit at depth. The deep sand and gravel bed lies unconformably on the bedrock which comprises shale of the Kettle Point formation.

HYDROLOGY

The flat topography in the area causes poor soil drainage characteristics and sluggish streamflow in the vicinity of the landfill site. An elaborate system of tile drains and canals is used to drain

the land so that crops can be grown. The water levels in the canals and drains are lower than that of the Sydenham River. Thus, ground in the upper sand aquifer in the vicinity of the dump flows in a westward direction toward the canals rather than south to the river as would be expected under natural hydrogeologic conditions.

The major aquifer in the area is found in the sand and gravel deposit which overlies the bedrock at a depth of about 80 feet. This aquifer is separated from the surficial sand aquifer by about 70 feet of relatively impermeable clay. From an analysis of water-well records in the vicinity of the dump site, ground water in the deep aquifer appears to move in a southward direction towards the Sydenham River.

WATER QUALITY

To determine the quality of ground water and surface water in the area, 27 well-and surface-water samples were collected for extensive analysis. The locations of the sampling points are shown in Figure 1, water-well records are summarized in Table 1, and the results of chemical analyses are included in Table 2.

Graphical representations of a part of the analyses results are presented in the Schoeller plots in figures 2, 3 and 4. These three graphs respectively present the basic chemical make-up of the well waters in the vicinity of the dump, the well waters that are remote from the dump and the surface waters in the vicinity of the dump.

A study of these plots reveals that: (1) the basic chemical characteristics of well waters in the vicinity of the dump are identical to those of wells that are remote from the site; (2) the well waters, the pit water and the river water each have uniquely different chemical characteristics; (3) a gradation of chemical ion concentrations exists from the highly polluted pit water in the dump to lesser contaminated waters in the drainage ditches around the dump and finally to the background concentrations in the river; (4) the above gradation is not repeated in the deep well waters which have entirely different chemical characteristics than the background chemical concentrations in the river water.

The analyses results also indicate that chemicals usually associated with leachate from a landfill operation are found in significant concentration in the pit water at the disposal site. Ammonia, phosphorus, iron, manganese, and zinc range from 30 to 1000 times greater concentration in the pit water than in either the Sydenham River or the deep wells. A reduction in the concentration of these chemicals in the surrounding drainage ditch system was evident with distance from the dump indicating that adsorption and dilution have taken place in the soil during lateral movement of the contaminated water.

Coliform bacteria counts greater than 1.5 million per 100 ml. were recorded in the pit water. The concentrations of coliform bacteria in the surrounding ditches was unacceptably high, but they decreased

with increasing distance from the source as a result of adsorption reactions in the soils. The bacteria counts in the sampled deep wells bear no relationship to distance from the site. The absence of fecal and streptococcus bacteria in the wells as opposed to 15,000 fecal coliforms per 100 ml. and 600,000 streptococcus per 100 ml. in the pit water, indicates the virtual lack of communication between the surficial sand aquifer and the deep sand and gravel aquifer from which residents draw water supplies.

CONCLUSIONS

The Wallaceburg landfill operation has contaminated both surface water and the water-table aquifer in the vicinity of the site. These waters contain chemicals and bacteria which are hazardous to health.

The dumping of garbage directly into the water-table in the pits, affords little opportunity for decomposition or sorption reactions. The contaminant is transmitted rapidly through the surficial aquifer to the tile and drainage systems in the area. No shallow water wells terminate in the upper sand near the site.

The presence of the thick, relatively impermeable clay deposits has prevented the downward movement of landfill leachates to the deep sand and gravel aquifer from which residents obtain supplies. This protective barrier has been augmented by the drain system in the area which tends to move the leachate westwardly away

from residents near the site and toward the local canal system.

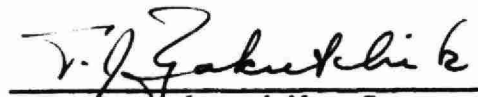
The deep aquifer in the area has not been contaminated by the landfill operation to this date. However, there is some possibility that leachate could enter the deeper aquifer if any of the water wells in the area are poorly constructed or corroded.

RECOMMENDATIONS

It is recommended that the Waste Management Branch instruct Wallaceburg to either upgrade the operations at the site in order to prevent ground-water and surface-water pollution in the area or, alternately, to abandon the site. The existing works should be covered with a suitable material to minimize the amount of leachate generated at the site.

Prepared by: F. R. Campbell, Geologist,
Surveys and Projects Branch.

FRC/ps
Oct. 29/71


T. J. Yakutchik, Supervisor,
Surveys and Projects Branch,
Division of Water Resources.

AREA OF SURVEY WALLACEBURGCOUNTY KENT

ONTARIO WATER RESOURCES COMMISSION

TABLE OF WATER WELL RECORDS

DATE 7/6/71RECORDER TRC

TABLE 1

Well No	Location			Owner	Driller	Well Type	Well Diameter	Depth	Static Level	Pumping Rate	Pumping Level	Quality	Use	Remarks, Log, etc.
	Tp	C	L		Elev									
1863	Dover	B F.	1	G. Arnold	576	•	3.5"	120	7	10		F	D	0 CLAY 3 g sd. B clay 92 92 sd 96 shale 120 * 101 cs 96'
1864	Dover	B F.	1	S. Toth	576	•	2"	86	0			F	D	0 CLAY 6 Driven 86' (driven thru clay probably into sd. at 86') * 86 cs 86'
1865	Dover	B F.	1	A. AARSSSEN	577	•	3"	88	16	5	22	F	F	0 soil 4 g sd. 9 clay 86 86 f. sd f. grul 88 cs 88 1/2 * 88
1867	Dover	B F.	2	A. AARSSSEN	577	•	2"	81.5	17	4	23	F	F	0 CLAY 2 sd 6 g sd B B clay 89 sd f. grul 91.5 cs 91 1/2 * 89
1868	Dover	B F.	2	S. Toth	576	•	4"	90	DRY					0 clay 4 sd 7 clay 81 81 grul 82 sh 90 cs 82 1/2
1869	Dover	B F.	2	S. Toth	576	•	4"	83	13			gas	ABAND	0 sd 7 clay 78 grul 80 80 sh 83 cs 83 1/2 * 80
1870	Dover	B F.	2	M. COAGHE	577	•	2"	89	12	4	22	F	F	0 soil 2 sd 8 clay 87 87 HP 88 f. sd f. grul 89 cs 88 * 88
1872	Dover	B F.	4	(BENOIT) J. SEYS	580	•	2"	87	9			F	D	0 CLAY 4 g sd 6 Driven 8 86 sh 87 * 87 cs 86 (Driven Thru clay prob.)
1875	Dover	B F.	4	C SEYS	580	•	2"	88	9			F	D	0 sd f. muc 2 sd 9 g sd 11 11 clay 86 sd f. c. grul 88 * 88 cs 88
1876	Dover	B F.	4	R. Chauvin	580	•	2"	88	13	5	23	F	D	0 sd 8 clay 86 sd f. grul 88 * 88 c gravel - wall well
1877	Dover	B F.	4	A Belanger	580	•	2"	89	13	8	20	F	D	0 sd 8 clay 87 sd f. grul 89 * 89 c gravel - wall well
1878	Dover	B F.	4	L. Warner	580	•	2"	88	12	6	18	F	D	0 cl 2 sd 6 g sd 12 cl 88 * 88 prob in sd f. grul underlying clay cs 88
1881	Dover	B F.	4	J. Knight	580	•	4"	87	20	2	20	F	D	0 sd 4 soil 25 sd f. c. 50 50 cl 70 sd f. grul 87 * 87 cs 87

ONTARIO WATER RESOURCES COMMISSION

 AREA OF SURVEY WALLACEBURG

TABLE OF WATER WELL RECORDS

 DATE 7/6/71

 COUNTY KENT

 RECORDER 7RC

2

TABLE I

Well No	Location			Owner	Driller	Well Type	Well Diameter	Depth	Static Level	Pumping Rate	Pumping Level	Quality	Use	Remarks, Log, etc
	TP	C	L		ELEV.									
1882	Dover	B. F.	4	P. Chauvin	580	●	2"	91	17	6	22	F	D	0 sd fcl 6 g sd 9 c 188 88 sd fgrul 91 * 91 cs: 93'
1452	Chatham ^G	1	5	J D CRAM	579	●	4"	118	15	2	21	F	D	0 grul 2 c 18 g sd 10 10 c 194 sd 97 sh 118 * 97 cs: 97
1454	Chatham ^G	1	8	S. Puskas	580	♀	3"	95	dry					0 sd 12 c 180 sd fgrul 84 84 sh 95 (pulled pipe)
1455	Chatham ^G	1	8	S Puskas	580	●	3"	86	10	6	10	F	D	0 c 12 sd 10 c 183 sd 84 84 sh 86 * 84 cs: 84
1456	Chatham ^G	1	9	B. Dubeau	580	●	2'	89	15	6	20	F	D	0 301K 2 f: sd 5 g sd 8 8 c 187 sd fgrul 89 * 89 cs: ?
1458	Chatham ^G	1	12	M. Sullivan	580	●	4'	85	12	6	16	F.	Com.	0 301K 2 c 19 g sd 11 c 180 80 sd 82 grul 84 sh 85 * 82 cs: 88
1420	Chatham	18	2	E. Caron	580	●	2"	76	9			F.	D.	0 c 1 f 9 sd 5 driven 75 75 sd 76 * 76 cs: 75 or shale(?)
1408	Chatham	18	1	A VanDeVelde	580	●	3"	75	12	4	28	F	D.	0 c 1 72 sd fgrul 74 74 grul 75 * 75 cs 76
1423	Chatham	18	3	T. Thibidenu	580	●	2"	78	0			F	D.	0 c 1 f 9 sd 6 driven 76 76.5' sh 78 * 78
1424	Chatham	18	2	7 Carter	580	●	2"	78 1/2	10	11	14	Salty	D.	0 sd 7 g sd 9 c 177 77 sd 78 1/2 * 78 1/2 cs 79'
1425	Chatham	18	2	D. Bechard	580	●	2"	79	10			F.	D.	0 MUCK 2 sd 6 g sd 8 8 c 178 sd fgrul 79 * 79 cs: ?
1429	Chatham	19	1	Fed. Gout	580	●	4"	88	14	10	25	F.	Com	0 sd 4 MUCK 6 CLAY 84 84 sd fgrul 86 sh 88 * 84 cs 86
2516	DOVER	18	3	A Fraser	580	●	2"	85 1/2	9 1/2	6		F	D	0 CLAY 2 g sd 10 driven 84 84 sh (?) 85 1/2 * 85 1/2 cs 8

COUNTY KENT

TABLE OF WATER WELL RECORDS

DATE 7/6/71

RECORDER FRC

TABLE I

[illegible]

Table 2

Bacterial and Chemical

Analyses Results

ONTARIO WATER RESOURCES COMMISSION — DIVISION OF LABORATORIES

BACTERIOLOGICAL REPORT



FILE: Wallaceburg Wells & Surface Water

DATE: 19 571 19 571 26 571

213815 213826

REPORT TO: F.R. Campbell, Surveys & Projects, 135 St. Clair W., Toronto, Ont.

COPY TO:

PARTICULARS:

LAB NO.

RESULTS PER 100 ML:

213815 1 R. Chauvin 8:45 AM

213815 L 10

FECAL COLIFORMS

PLATE COUNT

BACKGROUND COLONIES

COLIFORM BACTERIA

34000 L 10

STREPTOCOCCUS
L 10

PSEUDOMONAS

CLOSTRIDIUM

213816 2 A. Benoit 8:55 AM

213816 L 10

FECAL COLIFORMS

PLATE COUNT

BACKGROUND COLONIES

COLIFORM BACTERIA

400 L 10

STREPTOCOCCUS
L 10

PSEUDOMONAS

CLOSTRIDIUM

213817 3 D. Druer

213817 590

FECAL COLIFORMS

PLATE COUNT

BACKGROUND COLONIES

COLIFORM BACTERIA

1600000 110000

STREPTOCOCCUS
840

PSEUDOMONAS

CLOSTRIDIUM

213818 4 Blanger 9:05 AM

213818 L 10

FECAL COLIFORMS

PLATE COUNT

BACKGROUND COLONIES

COLIFORM BACTERIA

20 L 10

STREPTOCOCCUS
L 10

PSEUDOMONAS

CLOSTRIDIUM

213819 12 D. Chauvin 9:05 AM

213819 L 10

FECAL COLIFORMS

PLATE COUNT

BACKGROUND COLONIES

COLIFORM BACTERIA

150 10

STREPTOCOCCUS
L 10

PSEUDOMONAS

CLOSTRIDIUM

213820 5 Pit water 9:25 AM

213820 1000

FECAL COLIFORMS

PLATE COUNT

BACKGROUND COLONIES

COLIFORM BACTERIA

11800000 780000

STREPTOCOCCUS
100000

PSEUDOMONAS

CLOSTRIDIUM

213821 10 Retaining ditch 9:15 AM

213821 100

FECAL COLIFORMS

PLATE COUNT

BACKGROUND COLONIES

COLIFORM BACTERIA

23000000 70000

STREPTOCOCCUS
490

PSEUDOMONAS

CLOSTRIDIUM

213822 6 Tile Drier Sump 9:35 AM

213822 140

FECAL COLIFORMS

PLATE COUNT

BACKGROUND COLONIES

COLIFORM BACTERIA

740000 6700

STREPTOCOCCUS
30

PSEUDOMONAS

CLOSTRIDIUM

+ CHLORINE PRESENT

G & L MEANS GREATER THAN & LESS THAN

SEE REVERSE SIDE FOR INTERPRETATION

ONTARIO WATER RESOURCES COMMISSION — DIVISION OF LABORATORIES

BACTERIOLOGICAL REPORT



FILE :

SAMPLED ANALYSED REPORTED
D M Y D M Y D M Y

DATE:

REPORT TO:

COPY TO:

PARTICULARS:

RESULTS PER 100 ML:

LAB NO					FECAL COLIFORMS	PLATE COUNT	BACKGROUND COLONIES	COLIFORM BACTERIA
213823	11	Drainage ditch	9:45 AM	213823	100		70000	2600
					STREPTOCOCCUS	PSEUDOMONAS	CLOSTRIDIUM	
					L 10			
213824	7	D.Knight	9:55 AM	213824	10		20	L 10
					STREPTOCOCCUS	PSEUDOMONAS	CLOSTRIDIUM	
					L 10			
213825	8	L Labodie	10:00 AM	213825	10		20	L 10
					STREPTOCOCCUS	PSEUDOMONAS	CLOSTRIDIUM	
					10			
213826	9	J.Knight	10:10 AM	213826	10		550	L 10
					STREPTOCOCCUS	PSEUDOMONAS	CLOSTRIDIUM	
					L 10			
					FECAL COLIFORMS	PLATE COUNT	BACKGROUND COLONIES	COLIFORM BACTERIA
					STREPTOCOCCUS	PSEUDOMONAS	CLOSTRIDIUM	
					FECAL COLIFORMS	PLATE COUNT	BACKGROUND COLONIES	COLIFORM BACTERIA
					STREPTOCOCCUS	PSEUDOMONAS	CLOSTRIDIUM	
					FECAL COLIFORMS	PLATE COUNT	BACKGROUND COLONIES	COLIFORM BACTERIA
					STREPTOCOCCUS	PSEUDOMONAS	CLOSTRIDIUM	
					FECAL COLIFORMS	PLATE COUNT	BACKGROUND COLONIES	COLIFORM BACTERIA
					STREPTOCOCCUS	PSEUDOMONAS	CLOSTRIDIUM	

+ CHLORINE PRESENT

G & L MEANS GREATER THAN & LESS THAN

SEE REVERSE SIDE FOR INTERPRETATION

ONTARIO WATER RESOURCES COMMISSION — DIVISION OF LABORATORIES

BACTERIOLOGICAL REPORT



FILE: Wallaceburg, Wells and Surface Water

DATE: ^{SAMPLED}
D M Y 10 671 ^{ANALYSED}
D M Y 11 671 ^{REPORTED}
D M Y 21 671

216936 216943

REPORT TO: F.R. Campbell, Surveys and Projects, 135 St. Clair Ave., Toronto

COPY TO:

PARTICULARS:

LAB NO.

RESULTS PER 100 ML:

216936 D, Sutherland Ditch, 1:35 pm

216936

FECAL COLIFORMS	PLATE COUNT	BACKGROUND COLONIES	COLIFORM BACTERIA
130			9000
STREPTOCOCCUS	PSEUDOMONAS	CLOSTRIDIUM	
300			

216937 A, Sydenham River, 1:50 pm

216937

FECAL COLIFORMS	PLATE COUNT	BACKGROUND COLONIES	COLIFORM BACTERIA
L 10			520
STREPTOCOCCUS	PSEUDOMONAS	CLOSTRIDIUM	
50			

116938 15, Retaining Ditch, 2:40 pm

216938

FECAL COLIFORMS	PLATE COUNT	BACKGROUND COLONIES	COLIFORM BACTERIA
5300			660000
STREPTOCOCCUS	PSEUDOMONAS	CLOSTRIDIUM	
130000			

216939 16, Pit Water, 2:45 pm

216939

FECAL COLIFORMS	PLATE COUNT	BACKGROUND COLONIES	COLIFORM BACTERIA
G 15000			G 1500000
STREPTOCOCCUS	PSEUDOMONAS	CLOSTRIDIUM	
600000			

216940 17, Tile Drain Sump, 2:50 pm

216940

FECAL COLIFORMS	PLATE COUNT	BACKGROUND COLONIES	COLIFORM BACTERIA
L 100			21000
STREPTOCOCCUS	PSEUDOMONAS	CLOSTRIDIUM	
L 1000			

216941 18, Drainage Ditch, 3:00 pm

216941

FECAL COLIFORMS	PLATE COUNT	BACKGROUND COLONIES	COLIFORM BACTERIA
L 10			80
STREPTOCOCCUS	PSEUDOMONAS	CLOSTRIDIUM	
10			

216942 20, Driver Ditch, 3:20 pm

216942

FECAL COLIFORMS	PLATE COUNT	BACKGROUND COLONIES	COLIFORM BACTERIA
L 10			90
STREPTOCOCCUS	PSEUDOMONAS	CLOSTRIDIUM	
L 10			

216943 C, Sydenham River, 3:50 pm

216943

FECAL COLIFORMS	PLATE COUNT	BACKGROUND COLONIES	COLIFORM BACTERIA
310			4300
STREPTOCOCCUS	PSEUDOMONAS	CLOSTRIDIUM	
130			

+ CHLORINE PRESENT

G & L MEANS GREATER THAN & LESS THAN

SEE REVERSE SIDE FOR INTERPRETATION

ONTARIO WATER RESOURCES COMMISSION — DIVISION OF LABORATORIES

BACTERIOLOGICAL REPORT



FILE: Wallaceburg, Ont.

DATE:

SAMPLED D M Y	ANALYSED D M Y	REPORTED D M Y		
10 671	11 671	14 671	316971	316991

REPORT TO: F. R. Campbell, Surveys, & Projects, 135 St. Clair

COPY TO:

PARTICULARS:
LAB NO.

RESULTS PER 100 ML:

316971 1452 I.D. Cram well 12:00 noon

316971

FECAL COLIFORMS	PLATE COUNT	BACKGROUND COLONIES	COLIFORM BACTERIA
0		0	0
STREPTOCOCCUS	PSEUDOMONAS	CLOSTRIDIUM	
0			

316972 1455 S. Pushces Well 12:10 p.m.

316972

FECAL COLIFORMS	PLATE COUNT	BACKGROUND COLONIES	COLIFORM BACTERIA
0		624	14
STREPTOCOCCUS	PSEUDOMONAS	CLOSTRIDIUM	
0			

316973 1864 S. Toth Well 12:30 p.m.

316973

FECAL COLIFORMS	PLATE COUNT	BACKGROUND COLONIES	COLIFORM BACTERIA
0		0	0
STREPTOCOCCUS	PSEUDOMONAS	CLOSTRIDIUM	
0			

316974 1867 A. Aarssen Well 12:35 p.m.

316974

FECAL COLIFORMS	PLATE COUNT	BACKGROUND COLONIES	COLIFORM BACTERIA
0		2900	0
STREPTOCOCCUS	PSEUDOMONAS	CLOSTRIDIUM	
0			

316975 1870 M. Coghe Well 12:45 p.m.

316975

FECAL COLIFORMS	PLATE COUNT	BACKGROUND COLONIES	COLIFORM BACTERIA
0		0	0
STREPTOCOCCUS	PSEUDOMONAS	CLOSTRIDIUM	
0			

316976 1856 B. Dubeau Well 1:00 p.m.

316976

FECAL COLIFORMS	PLATE COUNT	BACKGROUND COLONIES	COLIFORM BACTERIA
0		4	0
STREPTOCOCCUS	PSEUDOMONAS	CLOSTRIDIUM	
0			

316977 1875 C. Seys Well 1:10 p.m.

316977

FECAL COLIFORMS	PLATE COUNT	BACKGROUND COLONIES	COLIFORM BACTERIA
2		0	0
STREPTOCOCCUS	PSEUDOMONAS	CLOSTRIDIUM	
0			

316978 B R. Seys Well 1:30 p.m.

316978

FECAL COLIFORMS	PLATE COUNT	BACKGROUND COLONIES	COLIFORM BACTERIA
0		0	0
STREPTOCOCCUS	PSEUDOMONAS	CLOSTRIDIUM	
0			

ONTARIO WATER RESOURCES COMMISSION — DIVISION OF LABORATORIES

BACTERIOLOGICAL REPORT



FILE :

SAMPLED ANALYSED REPORTED
D M Y D M Y D M Y

DATE:

REPORT TO:

COPY TO:

PARTICULARS:

LAB NO.

RESULTS PER 100 ML:

316979 1882 P. Chauvin Well 2:05 p.m.

316979

FECAL COLIFORMS	PLATE COUNT	BACKGROUND COLONIES	COLIFORM BACTERIA
0		0	0
STREPTOCOCCUS	PSEUDOMONAS	CLOSTRIDIUM	
0			

316980 1877 A. Belanger Well 2:10 p.m.

316980

FECAL COLIFORMS	PLATE COUNT	BACKGROUND COLONIES	COLIFORM BACTERIA
0		0	12
STREPTOCOCCUS	PSEUDOMONAS	CLOSTRIDIUM	
0			

316981 1876 R. Chauvin Well 2:20 p.m.

316981

FECAL COLIFORMS	PLATE COUNT	BACKGROUND COLONIES	COLIFORM BACTERIA
0		13	0
STREPTOCOCCUS	PSEUDOMONAS	CLOSTRIDIUM	
0			

316982 1881 D. Knight Well 3:10 p.m.

316982

FECAL COLIFORMS	PLATE COUNT	BACKGROUND COLONIES	COLIFORM BACTERIA
0		4	0
STREPTOCOCCUS	PSEUDOMONAS	CLOSTRIDIUM	
0			

316983 21 L. Labadie Well 3:30 p.m.

316983

FECAL COLIFORMS	PLATE COUNT	BACKGROUND COLONIES	COLIFORM BACTERIA
0		0	0
STREPTOCOCCUS	PSEUDOMONAS	CLOSTRIDIUM	
0			

316984 22 J. Knight Well 3:40 p.m.

316984

FECAL COLIFORMS	PLATE COUNT	BACKGROUND COLONIES	COLIFORM BACTERIA
0		202	16
STREPTOCOCCUS	PSEUDOMONAS	CLOSTRIDIUM	
0			

316985 1872 A. Benoit Well 4:00 p.m.

316985

FECAL COLIFORMS	PLATE COUNT	BACKGROUND COLONIES	COLIFORM BACTERIA
0		50	0
STREPTOCOCCUS	PSEUDOMONAS	CLOSTRIDIUM	

316986 25 J. Snelgrove 5:40 p.m.

316986

FECAL COLIFORMS	PLATE COUNT	BACKGROUND COLONIES	COLIFORM BACTERIA
0		0	0
STREPTOCOCCUS	PSEUDOMONAS	CLOSTRIDIUM	

+ CHLORINE PRESENT

G & L MEANS GREATER THAN & LESS THAN

SEE REVERSE SIDE FOR INTERPRETATION

ONTARIO WATER RESOURCES COMMISSION — DIVISION OF LABORATORIES

BACTERIOLOGICAL REPORT



FILE :

SAMPLED D M Y ANALYSED D M Y REPORTED D M Y

DATE:

REPORT TO:

COPY TO:

PARTICULARS:

LAB NO

316987

2523, G. Rabideau, 6:25 pm

316987

316988

2516, A. Fraser, 6:30 pm

316988

316989

2518, M. De Walle, 7:00 pm

316989

316990

1408, A. Vandeveld, 7:15

316990

316991

1878, H. Dubois, 2:00 pm

316991

RESULTS PER 100 ML:

FECAL COLIFORMS	PLATE COUNT	BACKGROUND COLONIES	COLIFORM BACTERIA
0		0	0
STREPTOCOCCUS	PSEUDOMONAS	CLOSTRIDIUM	
0			
FECAL COLIFORMS	PLATE COUNT	BACKGROUND COLONIES	COLIFORM BACTERIA
0		0	0
STREPTOCOCCUS	PSEUDOMONAS	CLOSTRIDIUM	
0			
FECAL COLIFORMS	PLATE COUNT	BACKGROUND COLONIES	COLIFORM BACTERIA
0		0	0
STREPTOCOCCUS	PSEUDOMONAS	CLOSTRIDIUM	
0			
FECAL COLIFORMS	PLATE COUNT	BACKGROUND COLONIES	COLIFORM BACTERIA
0		0	0
STREPTOCOCCUS	PSEUDOMONAS	CLOSTRIDIUM	
0			
FECAL COLIFORMS	PLATE COUNT	BACKGROUND COLONIES	COLIFORM BACTERIA
0		0	0
STREPTOCOCCUS	PSEUDOMONAS	CLOSTRIDIUM	
0			
FECAL COLIFORMS	PLATE COUNT	BACKGROUND COLONIES	COLIFORM BACTERIA
0		0	0
STREPTOCOCCUS	PSEUDOMONAS	CLOSTRIDIUM	
0			
FECAL COLIFORMS	PLATE COUNT	BACKGROUND COLONIES	COLIFORM BACTERIA
0		0	0
STREPTOCOCCUS	PSEUDOMONAS	CLOSTRIDIUM	
0			

+ CHLORINE PRESENT

G & L MEANS GREATER THAN & LESS THAN

SEE REVERSE SIDE FOR INTERPRETATION

**ONTARIO WATER RESOURCES COMMISSION
CHEMICAL LABORATORIES**

Page 1 of 2

All analyses except pH reported in
p.p.m. unless otherwise indicated

W A T E R A N A L Y S I S

1 p.p.m. = 1 mgm. / litre
= 1 lb. / 100,000 Imp. Gals.

Municipality: **Wallaceburg**

Report to: **P.P. Campbell, Division of Water Resources
135 St. Clair Ave. W.**

**A. Redekopp
Central Files**

Source: **Wells and Surface water**

Date Sampled: **May 19/71** by: **P.M. and F.C.A.**

Date Sampled: May 1977

by: J. A. Smith

Lab. No.	Sodium as Na	Potassium as K	Calcium as Ca	Magnesium as Mg	Sulphate as SO ₄	Alkalinity as CaCO ₃	Chloride as Cl	Iron as Fe	Diss. Solids	Manganese as Mn	Hardness as CaCO ₃	Sulphide as H ₂ S mm
W20-82	362	2.5	16	4	19	284	412	1.2	1015	0.14	58	--
W20-87	304	1.4	12	4	< 5	236	334	2.45	845	0.05	46	--
W20-84	24	2.4	84	20	58	208	55	1.9	450	0.05	292	--
W20-85	315	1.6	10	3	< 5	252	333	0.70	855	0.03	40	--
W20-86	300	1.8	10	3	< 5	253	325	0.40	835	0.03	40	--
W20-87	710	127	268	100	250	2119	170	6.5	3740	0.11	1180*	0.3***
W20-88	33	1.3	288	66	480	428	91	2.4	1360	0.08	990	--
W20-89	27	1.3	340	56	450	577	38	3.8	1410	0.33	1080	--
W20-90	20	1.0	71	18	34	189	55	0.50	370	0.20	252	--
W20-91	400	2.0	14	4	< 5	268	433	0.20	1025	0.03	54	--
W20-92	361	1.8	15	5	< 5	262	424	0.35	1015	0.02	54	--
W20-93	383	2.2	18	5	3	272	468	0.60	1115	0.03	68	--
W20-82	1	R. Chauvin Well				8.45 a.m.		<div>* Filtered ** Interference *** Analysis performed June 2/71</div>				
W20-83	2	A. Benoit Well				8.55 a.m.						
W20-84	3	D. Druer				10.15 a.m.						
W20-85	4	Blanger Well				9.05 a.m.						
W20-86	12	P. Chauvin Well				"						
W20-87	5	Pit Water				9.25 a.m.						
W20-88	10	Retaining Ditch				9.15 a.m.						
W20-89	6	Tile Drain Sump				9.35 a.m.						
W20-90	11	Drainage Ditch				9.45 a.m. (3 identical samples)						
W20-91	7	D. Knight Well				9.55 a.m. " " "						
W20-92	8	L. Labadie Well				10.00 a.m. " " "						
W20-93	9	J. Knight Well				10.10 a.m. " " "						

ONTARIO WATER RESOURCES COMMISSION

CHEMICAL LABORATORIES

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All analyses except pH reported in
p.p.m. unless otherwise indicated

W A T E R A N A L Y S I S

1 p.p.m. = 1 mgm. / litre
= 1 lb. / 100,000 Imp. Gals.

Municipality: <u>Wellesburg</u>		Report to: _____		c.c.			
Source: _____							
Date Sampled: <u>May 19/71</u>		by: <u>P.M. and F.C.A.</u>		mm			

Lab. No.	Free Ammonia	NITROGEN Total Kjeldahl	AS N Nitrite	Nitrate	Total Phosphorus as P	Anionic Detergents as ABS	C.O.D.	B.O.D.				
W20-82	.13	.53	.002	.02	.036	0.0	60	6.0				
W20-83	.01	.41	.004	.80	.059	0.0	40	3.0				
W20-84	.25	1.7	.010	.01	.18	0.0	40	4.5				
W20-85	.05	.42	.001	.04	.045	0.0	40	3.0				
W20-86	< .01	.31	.001	< .01	.043	0.0	30	5.5				
W20-87	14.	35.	.05	**	3.4	0.2	860	320.				
W20-88	.07	.86	.020	.26	.12	0.0	20	1.2				
W20-89	.36	1.2	.15	.16	.35	0.1	70	2.5				
W20-90	.05	.58	.002	< .01	.088	0.1	30	4.5				
W20-91	.02	.42	.002	< .01	.050	0.0	20	5.5				
W20-92	.07	.36	.002	< .01	.037	0.0	30	3.0				
W20-93	.13	.43	.002	< .01	.040	0.0	10	4.0				
** Interference												
See description on Page 1 of 2												

ONTARIO WATER RESOURCES COMMISSION
CHEMICAL LABORATORIES

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All analyses except pH reported in
p.p.m. unless otherwise indicated

WATER ANALYSIS

1 p.p.m. = 1 mgm. / litre
= 1 lb. / 100,000 Imp. Gals.

Municipality: WALLACEBURG		Report to: R.C. Campbell, ✓		c.c. A.B. Redekopp		(rd)
Source: Wells		Division of Water Resources, 135 St. Clair Avenue West, Toronto, Ontario.		Central Files		
Date Sampled: 14/15/6/71		by: B.M. & R.C.				

Lab. No.	BOD	S O L I D		Anionic Deterg. as ABS	C.O.D.	N I T R O G E N		AS N	Phos- phorus as P.	T.O.C.	
		Tot.	Susp.			Diss.	Free Ammonia				Total Kjeldahl
W24-49	> 13	---	---	1020	0.1	25	0.34	0.40	.002 < 0.01	.038	23.5
W24-50	> 30	--	--	830	0.0	30	0.24	0.65	.001 < 0.01	0.12	21.0
W24-51	> 13	---	---	950	0.0	30	0.23	0.46	.020 0.13	.040	22.0
W24-52	> 12	---	---	1450	0.0	40	0.30	0.53	.003 < 0.01	.030	19.5
W24-53	> 13	---	---	870	0.0	25	0.36	0.37	.001 < 0.01	.040	30.0
W24-54	> 14	---	---	900	0.0	20	0.28	0.49	.002 < 0.01	.046	22.5
W24-55	> 14	---	---	850	0.0	20	0.20	0.29	.001 < 0.01	.036	26.5

M24-49	1452	J.D. Cram Well - 4:00 P.M.
W24-50	1455	S. Pushas Well 4:20 P.M.
W24-51	1864	G. Toth Well 4:35 P.M.
W24-52	1867	A. Aarssen Well 4:50 P.M.
W24-53	1870	M. Gogghe Well 5:10 P.M.
W24-54	1455	B. Dubeau Well 5:25 P.M.
W24-55	1872	A. Benoit Well 5:40 P.M.

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WATER ANALYSIS

(rd)

c.c. A.B. Redekopp
Central Files

Date Sampled: 14/15/6/71 by: B.M. & R.C.

See page 1 of 3.

ONTARIO WATER RESOURCES COMMISSION
CHEMICAL LABORATORIES

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All analyses except pH reported in
p.p.m. unless otherwise indicated

WATER ANALYSIS

1 p.p.m. = 1 mgm. / litre
= 1 lb. / 100,000 Imp. Gals.

Municipality: Wallaceburg			Report to: R.C. Campbell, Division of Water Resources, 135 St. Clair Avenue West, Toronto, Ontario.			C.C. A.B. Redekopp Central Files		
Source: Wells								
Date Sampled: 14/15/6/71			by: B.M. & R.C.					

Lab. No.	Chromium as Cr.	Zinc as Zn.	Copper as Cu.	Nickel as Ni.	Lead as Pb.	Cadmium as Cd.	Manganese as Mn.	Iron as Fe.	Arsenic as As.	Cyanide as HCN	Sulphide as H ₂ S
W24-49	0.0	0.0	0.0	---	0.0	0.0	0.01	0.06	< .01	< .01	.0
W24-50	0.0	0.27* 0.27o	0.0	---	0.0	0.0	0.02	1.90* 0.50o	< .01	0.00	.0
W24-51	0.0	0.0	0.0	---	0.0	0.0	0.0	1.15* 0.85o	< .01	0.00	.1
W24-52	0.0	0.15	0.0	---	0.0	0.0	0.01	0.15	0.00	0.00	.0
W24-53	0.0	0.14	0.0	---	0.0	0.0	0.0	0.50	< .01	0.00	.0
W24-54	0.0	0.07	0.0	---	0.0	0.0	0.0	0.25	< .01	< .01	.0
W24-55	0.0	0.0	0.0	---	0.0	0.0	0.0	0.16	< .01	< .01	.0

* total including particulate matter.
o dissolved.

(rd)

ONTARIO WATER RESOURCES COMMISSION
CHEMICAL LABORATORIES
WATER ANALYSIS Page 1 of 43

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All analyses except pH reported in
p.p.m. unless otherwise indicated

1 p.p.m. = 1 mgm. / litre
= 1 lb. / 100,000 Imp. Gals.

Municipality: Wallaceburg		Report to: R. Campbell ✓		c.c.	
Source: Wells		Division of Water Resources		A. Redekopp Central Files	
Date Sampled: June 15/71		by: B. M & R.C.		bc	

Lab. No.	BOD	SOLIDS Diss.	Anionic Detergents	COD	NITROGEN AS N		Nitrite	Nitrate	Phosphorus as P	T.O.C.		
					Free Ammonia	Total Kjeldahl						
W24-56	>12	870	0.0	20	0.15	0.36	.001	0.02	.045	22.0		
W24-57	>13	880	0.0	20	0.29	0.38	.002	<0.01	.032	22.5		
W24-58	>13	1010	0.0	20	0.32	0.47	.001	<0.01	.034	21.5		
W24-59	>13	1130	0.0	35	0.34	0.44	.002	<0.01	.034	24.5		
W24-60	>12	1030	0.0	30	0.32	0.45	.001	<0.01	.044	23.5		
W24-61	>13	1120	0.0	25	0.36	0.49	.002	<0.01	.078	25.5		
W24-62	>13	1130	0.0	40	0.34	0.42	.001	<0.01	.016	29.5		

W24-56	1875	C. Seys Well 8:40 am
W24-57	B	E. Seys Well 1:55 am
W24-58	23	L. Labadie Well 9:20 am
W24-59	22	J. Knight Well 9:40 am
W24-60	1881	D. Knight Well 10:20 am
W24-61	2523	G. Rabideau Well 3:45 pm
W24-62	2516	A Fraser Well 3:25 pm
—	2518	M. De Wolfe 3:25 pm (Not Received)

ONTARIO WATER RESOURCES COMMISSION
CHEMICAL LABORATORIES

All analyses except pH reported in
p.p.m. unless otherwise indicated

WATER ANALYSIS Page 2 of 3

1 p.p.m. = 1 mgm. / litre
= 1 lb. / 100,000 Imp. Gals.

Municipality:				Report to:				c.c.			
Source:								bc			
Date Sampled:				by:							

Lab. No.	Hardness as CaCO ₃	Alkalinity as CaCO ₃	Iron as Fe	Chloride as Cl	pH at Lab.	Flouride as F	Sulphate as SO ₄	Sodium as Na	Potassium as K	Calcium as Ca	Magnesium as Mg
W24-56	48	233	- -	347	7.9	1.3	<5	321	1.6	13	4
W24-57	44	260	- -	334	8.2	1.3	<5	315	1.7	12	3
W24-58	56	262	- -	411	8.1	1.3	<5	371	2.0	15	4
W24-59	68	272	- -	460	8.0	1.3	<5	384	2.2	18	6
W24-60	54	268	- -	419	8.1	1.3	<5	375	2.1	14	5
W24-61	62	312	- -	444	8.1	1.1	<5	384	2.5	17	5
W24-62	62	346	- -	421	8.0	1.1	<5	400	2.6	17	5

ONTARIO WATER RESOURCES COMMISSION
CHEMICAL LABORATORIES

WATER ANALYSIS Page 3 of 3

All analyses except pH reported in
p.p.m. unless otherwise indicated

1 p.p.m. = 1 mgm. / litre
= 1 lb. / 100,000 Imp. Gals.

Municipality: Wallaceburg				Report to:				c.c. A. Redekopp Central Files			
Source:											
Date Sampled:				by:				bc			
Lab. No.	Chromium as Cr	Zinc as Zn	Copper as Cu	Nickel as Ni	Lead as Pb	Cadmium as Cd	Manganese as Mn	Iron as Fe	Arsenic as As	Cyanide as HCN	Sulphide as H ₂ S
W24-56	0.0	0.28	0.0	- -	0.0	0.0	0.0	0.26	0.00	<.01	.0
W24-57	0.0	0.04	0.0	- -	0.0	0.0	0.0	0.27	0.00	<.01	.0
W24-58	0.0	0.04	0.0	- -	0.0	0.0	0.01	0.20	<.01	<.01	.0
W24-59	0.0	0.11	0.0	- -	0.0	0.0	0.02	0.04	0.00	<.01	.0
W24-60	0.0	0.08	0.0	- -	0.0	0.0	0.0	0.15	0.00	<.01	.0
W24-61	0.0	0.08	0.0	- -	0.0	0.0	0.0	0.01	0.00	<.01	.0
W24-62	0.0	0.07	0.0	- -	0.0	0.0	0.0	0.00	0.00	<.01	.0
* All Tests performed on preserved sample.											

ONTARIO WATER RESOURCES COMMISSION
CHEMICAL LABORATORIES

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All analyses except pH reported in
p.p.m. unless otherwise indicated

WATER ANALYSIS

1 p.p.m. = 1 mgm. / litre
= 1 lb. / 100,000 Imp. Gals.

Municipality: **Wallaceburg**

Report to: **R. Campbell, Div. of Water Resources**

c.c. **A. Redekopp**
Central Files

Source: **Wells**

Date Sampled: **June 14, 15/71** by: **B.M. and R.C.**

mm

Lab. No.	Hardness as CaCO ₃	Alkalinity as CaCO ₃	Iron as Fe	Chloride as Cl	pH at Lab.	Fluoride as F	Apparent Colour Units	Zinc XXXXXX as Zn	Sulphate as SO ₄	Sodium as Na	Potassium as K	Calcium as Ca	Magnesium as Mg
W24-43	56	235	0.46	370	8.2	1.2		0.07	< 5	306	2.5	15	4'
W24-44	40	251	0.45	323	8.2	1.2		0.13	< 5	309	1.8	10	3
W24-45	40	252	0.20	318	7.9	1.4		0.03	< 5	301	1.8	10	3
W24-46	72	310	0.0	538	8.1	1.2		0.50	< 5	452	2.7	18	6
W24-47	28	330	0.10	364	8.2	1.6		0.10	< 5	375	2.3	8	2
W24-48	58	284	1.85* 0.05**	401	8.1	1.5		0.12* 0.07**	5	355	2.6	16	4
* Total including particulate matter ** Dissolved													

W24-43	1878	H. Dubeau Well	7.55 p.m.
W24-44	1877	A. Belanger Well	8.10 p.m.
W24-45	1882	P. Chauvin Well	8.05 p.m.
W24-46	25	Snelgrove Well	8.40 p.m.
W24-47	1408	A. Van De Velde Well	8.55 p.m.
W24-48	1876	R. Chauvin Well	8.20 p.m.

ONTARIO WATER RESOURCES COMMISSION

CHEMICAL LABORATORIES

Page 2 of 2

 All analyses except pH reported in
p.p.m. unless otherwise indicated

WATER ANALYSIS

 1 p.p.m. = 1 mgm. / litre
= 1 lb. / 100,000 Imp. Gals.

Municipality: Wallaceburg													Report to:		c.c.	
Source:																
Date Sampled: June 14, 15/71 by: B.M. and R.C.																
Lab. No.	Chromium as Cr	Copper as Cu	Lead as Pb	Cadmium as Cd	Manganese as Mn	Arsenic as As	Cyanide as HCN	Sulphide as H ₂ S	B.O.D.	Diss. Solids	Anionic Detergents as ABS	mm	C.O.D.			
W24-43	0.0	0.0	0.0	0.0	0.01	0.00	< .01	.0	> 14	920	0.0		45			
W24-44	0.0	0.0	0.0	0.0	0.0	< .01	< .01	.0	> 13	860	0.0		30			
W24-45	0.0	0.0	0.0	0.0	0.0	< .01	0.00	.0	22	860	0.0		30			
W24-46	0.0	0.0	0.0	0.0	0.01	0.00	< .01	.0	> 15	1260	0.0		30			
W24-47	0.0	0.0	0.0	0.0	0.0	0.00	0.00	.1	13.	1020	0.0		20			
W24-48	0.0	0.0	0.0	0.0	0.01	< .01	0.00	.0	48.	1020	0.1		55			
		NITROGEN	AS N		Phosphorus											
	Free Ammonia	Total Kjeldahl	Nitrite	Nitrate	as P	T.O.C.										
W24-43	0.34	0.43	.002	< 0.01	.040	22.5										
W24-44	0.29	0.40	.001	< 0.01	.036	22.5										
W24-45	0.13	0.40	.001	< 0.01	.046	24.0										
W24-46	0.37	0.46	.001	< 0.01	.030	28.5										
W24-47	0.33	0.44	.001	< 0.01	.028	25.0										
W24-48	0.34	1.0	.002	< 0.01	0.15	24.0										
< - Less than > More than																
See description on page 1 of 2																

ONTARIO WATER RESOURCES COMMISSION
CHEMICAL LABORATORIES

(4)

All analyses except pH reported in
p.p.m. unless otherwise indicated

WATER ANALYSIS Page 1 of 3

1 p.p.m. = 1 mgm. / litre
= 1 lb. / 100,000 Imp. Gals.

Municipality: Wallaceburg

Report to: R. Campbell
Division of Water Resources

c.c.
A. Redekopp
Central Files
bc

Source: Stream & Sewage Water

Date Sampled: June 10 & 15/71 by: B.M. & R.C.

Lab. No.	BOD	SOLIDS	Anionic	COD	NITROGEN	AS N	Nitrite	Nitrate	Phosphorus as P	T.O.C.		
		Diss.	Detergents as ABS		Free	Total						
W24-63	7.0	380	0.1	30	1.2	3.1	0.16	2.8	0.65	17		
W24-64	4.0	240	0.0	30	0.06	1.0	.008	0.18	0.12	16		
W24-65	6.5	570	0.1	35	0.04	0.90	.009	0.03	.090	23		
W24-66	10.	1230	0.5	80	1.5	4.0	.004	<0.01	0.85	56		
W24-67	240	4370	0.8	1540	18.	43.	.028	<0.01	3.8	550*		
W24-68	5.5	930	0.1	50	0.06	1.5	.021	0.18	0.25	12.5		
W24-69	12.	1080	0.1	75	0.02	1.3	.002	<0.01	0.15	35.5		
measured for filtrate. *measured for filtrate.												

W24-63	D	Sutherland Ditch	8:55am
W24-64	C	Sydenham River	9:50 am
W24-65	21	Druer Ditch	10:05am
W24-66	17	Tile Drain Sump	10:45am
W24-67	16	Pit Water	11:00am
W24-68	15	Retaining Ditch	11:45am
W24-69	18	Drainage Ditch	11:55am

ONTARIO WATER RESOURCES COMMISSION

CHEMICAL LABORATORIES

WATER ANALYSIS Page 2 of 3

All analyses except pH reported in
p.p.m. unless otherwise indicated

1 p.p.m. = 1 mgm. / litre
= 1 lb. / 100,000 Imp. Gals.

Municipality: Wallaceburg				Report to:				c.c.			
Source:				bc							
Date Sampled:				by:							

Lab. No.	Hardness as CaCO ₃	Alkalinity as CaCO ₃	Iron as Fe	Chloride as Cl	pH at Lab.	Flouride as F	Sulphate as SO ₄	Sodium as Na	Potassium as K	Calcium as Ca	Magnesium as Mg	
W24-63	196	137	- -	38	7.5	0.4	50	17	2.4	60	11	
W24-64	142	108	- -	17	8.2	0.1	32	9	1.6	41	10	
W24-65	246	124	- -	126	7.6	0.3	64	55	2.6	78	13	
W24-66	900	538	- -	41	7.2	0.4	347	29	2.1	288	44	
W24-67	1330*	1899	- -	341***	6.8	2.7	487	653	105	344*	114*	
W24-68	416	68	- -	46	7.7	1.1	483	77	3.3	146	13	
W24-69	416	191	- -	261	7.4	0.6	97	124	8.0	139	17	
						*filtered						

*** Sample treated with H₂SO₄ and Hydrogen Peroxide.

ONTARIO WATER RESOURCES COMMISSION
CHEMICAL LABORATORIES
WATER ANALYSIS PAGE 3 of 3

All analyses except pH reported in
p.p.m. unless otherwise indicated

1 p.p.m. = 1 mgm. / litre
= 1 lb. / 100,000 Imp. Gals.

Municipality: Wallaceburg			Report to:			c.c.		
Source:								
Date Sampled:			by:			bc		

Lab. No.	Chromium as Cr	Zinc as Zn	Copper as Cu	Nickel as Ni	Lead as Pb	Cadmium as Cd	Manganese as Mn	Iron as Fe	Arsenic as As	Cyanide as HCN	Sulphide as H ₂ S	
W24-63	0.0	0.09	0.0	- -	0.0	0.0	0.09	2.42	0.02	<.01	.0	
W24-64	0.0	0.0	0.0	- -	0.0	0.0	0.03	0.85	<.01	<.01	.0	
W24-65	0.0	0.0	0.0	- -	0.0	0.0	0.03	0.42	0.02	<.01	.0	
W24-66	0.0	0.0	0.0	- -	0.0	0.0	0.42	1.23	0.01	.02	2.	
W24-67	0.0	3.0	0.0	- -	0.0	0.0	1.38	51.0	0.02	.02	10.**	4.*** .4*
W24-68	0.0	0.09	0.0	- -	0.0	0.0	0.04	4.48	0.02	<.01	.0	
W24-69	0.0	0.07	0.0	- -	0.0	0.0	2.03	0.91	0.05	<.01	.0	

* dissolved sulphide

** total sulphide present

*** sulphide released by acetic acid
(does not include heavy metal sulphide)

**ONTARIO WATER RESOURCES COMMISSION
CHEMICAL LABORATORIES**

MISCELLANEOUS ANALYSIS Page 1 of 4

All analyses except pH reported in
p.p.m. unless otherwise indicated

1 p.p.m. = 1 mgm. / litre
= 1 lb. / 100,000 Imp. Gals.

Municipality: Wallaceburg

Report to: F.R. Campbell ✓

c.c. Central Files

Source: Wells & Surface Water

Surveys Projects
Division of Water Resources
135 St. Clair Ave. W.

bc

Date Sampled: June 10/71 by: B. Macdonald

Lab. No.	Phenols in PPB *	* Test performed on preserved samples.											
M23-421	4												
M23-422	4												
M23-423	4												
M23-424	4												
M-23-425	4												
M23-426	4												
M23-427	4												
M23-428	4												
M23-421	1452	J.D. Cram Well 12.00 noon											
M23-422	1455	S. Pushas Well 12.10pm											
M23-423	1864	S. Toth Well 12.30 pm											
M23-424	1867	A. Arssen Well 12.35 pm											
M23-425	1870	M. Coggle 12.45 pm											
M23-426	1456	B. Dubeau 1.00 pm											
M23-427	1875	C. Seys 1.10 pm											
M23-428		B E. Seys 1.30 pm											

**ONTARIO WATER RESOURCES COMMISSION
CHEMICAL LABORATORIES**

MISCELLANEOUS Page 2 of 4

All analyses except pH reported in
p.p.m. unless otherwise indicated

1 p.p.m. = 1 mgm. / litre
= 1 lb. / 100,000 Imp. Gals.

Municipality: Wallaceburg		Report to: F.R. Cambell Surveys & Projects		c.c. Central Files bc					
Source: Wells & Surface Water									
Date Sampled: June 10/71		by: B. Macdonald							
Lab. No.	Phenols in PPB *	* Test performed on preserved sample.							
M23-429	4								
M23-430	6								
M23-431	4								
M23-432	2								
M23-433	2								
M23-434	120								
M23-435	500								
M23-436	10								
M23-429	D	Sutherland Ditch 1.35 pm							
M23-430	A	Sydenham River 1.50 pm							
M23-431	1882	P. Chauvin Well 2.05 pm							
M23-432	1877	A. Belanger Well 2.10 pm							
M23-433	1876	R. Chauvin Well 2.20 pm							
M23-434	15	Retaining Ditch 2.40 pm							
M23-435	16	Pit Water 2.45 pm							
M23-436	17	Tile Drain Sump 2.50 pm							

ONTARIO WATER RESOURCES COMMISSION
CHEMICAL LABORATORIES

All analyses except pH reported in
p.p.m. unless otherwise indicated

MISCELLANEOUS Page 3 of 4

1 p.p.m. = 1 mgm. / litre
= 1 lb. / 100,000 Imp. Gals.

Municipality: Wallaceburg		Report to: F.R. Campbell						c.c. Central Files					
Source: Well & Surface Water		bc											
Date Sampled: June 10/71		by: B.M.											
Lab. No.	Phenols in PPB *	* Test performed on preserved sample											
M23-437	2												
M23-438	2												
M23-439	2												
M23-440	4												
M23-441	2												
M23-442	2												
M23-443	2												
M23-444	2												
M23-437	18	Drainage Ditch 3.00 pm											
M23-438	1881	D. Knight Well 3.10 pm.											
M23-439	20	Druer Ditch 3.20 pm											
M23-440	21	L. Labadie Well 3.30 pm											
M23-441	22	J. Knight Well 3.40 pm											
M23-442		C. Sydenham River 3.50 pm											
M23-443	1872	A. Benoit Well 4.00 pm (Bottle # 1472)											
M23-444	25	J. Snelgrove Well 5.40 pm											

ONTARIO WATER RESOURCES COMMISSION
CHEMICAL LABORATORIES

MISCELLANEOUS

Page 4 of 4

All analyses except pH reported in
p.p.m. unless otherwise indicated

1 p.p.m. = 1 mgm. / litre
= 1 lb. / 100,000 Imp. Gals.

Municipality: Wallaceburg

Report to: F. R. Campbell

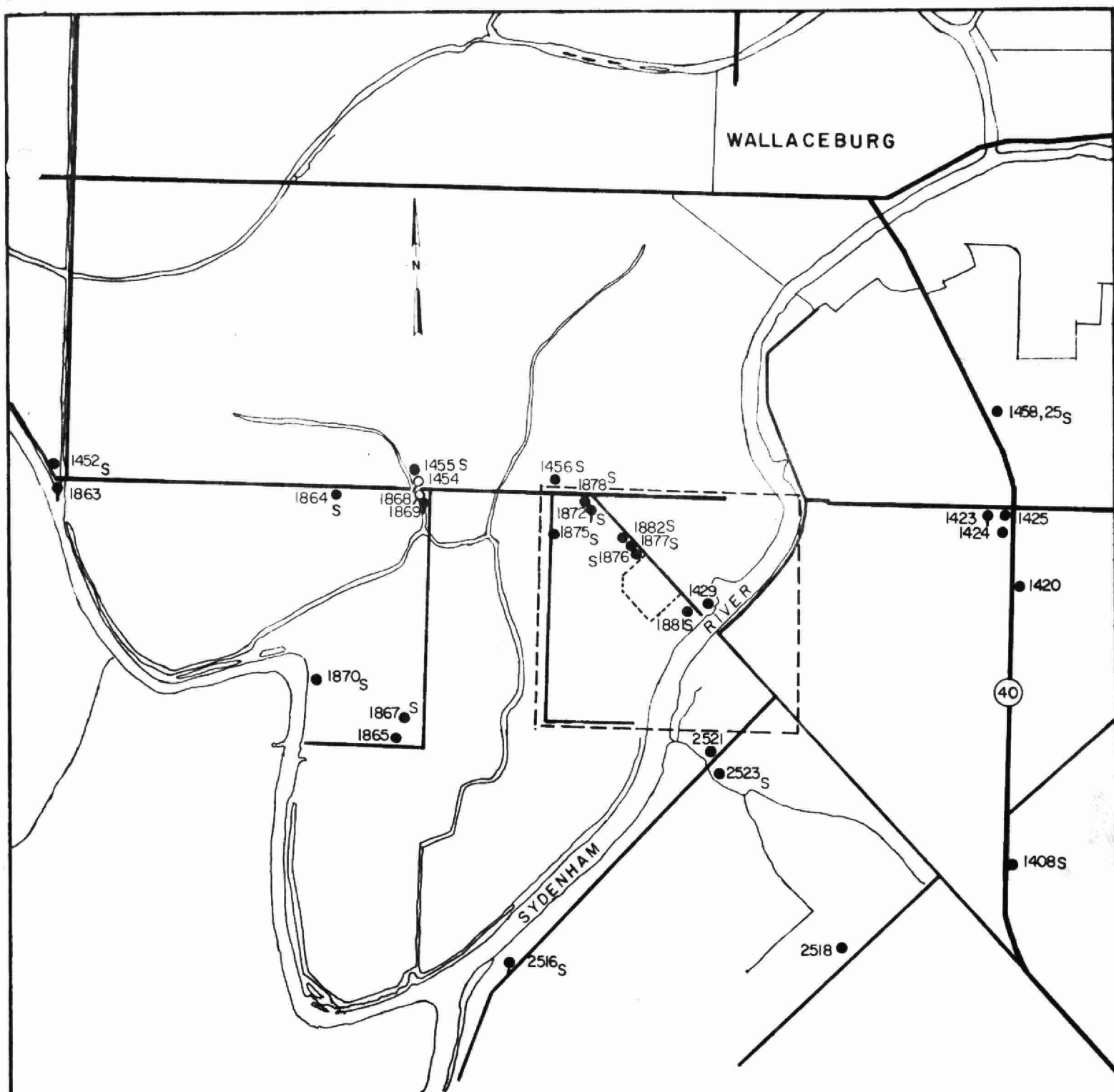
c.c. Central Files

Source: Wells & Surface Water

bc

Date Sampled: June 10/71 by: B. Macdonald

Lab. No.	Phenols in PPB *	* Test performed on preserved sample.											
M23-445	2												
M23-446	2												
M23-447	2												
M23-448	2												
M23-449	2												
M23-445	2523	G. Rabideau Well 6.25 pm											
M23-446	2516	A. Fraser 6/30 pm											
M23-447	2518	M. DeWolfe 7.00 pm											
M23-448	1408	A. Vanderveld 7.15 pm											
M23-449	1878	H. Dubeau 2.00 pm											



LEGEND

- Drilled well in overburden
- ◐ Drilled well in bedrock
- Drilled well in bedrock (abandoned)
- Sanitary landfill site
- S Sample location
- Figure 1A

ONTARIO WATER RESOURCES COMMISSION

Town of Wallaceburg

Ground Water Pollution Investigation

Sanitary Landfill Site

Well Locations and

Sampling Points

DATE: OCT 71

SCALE:

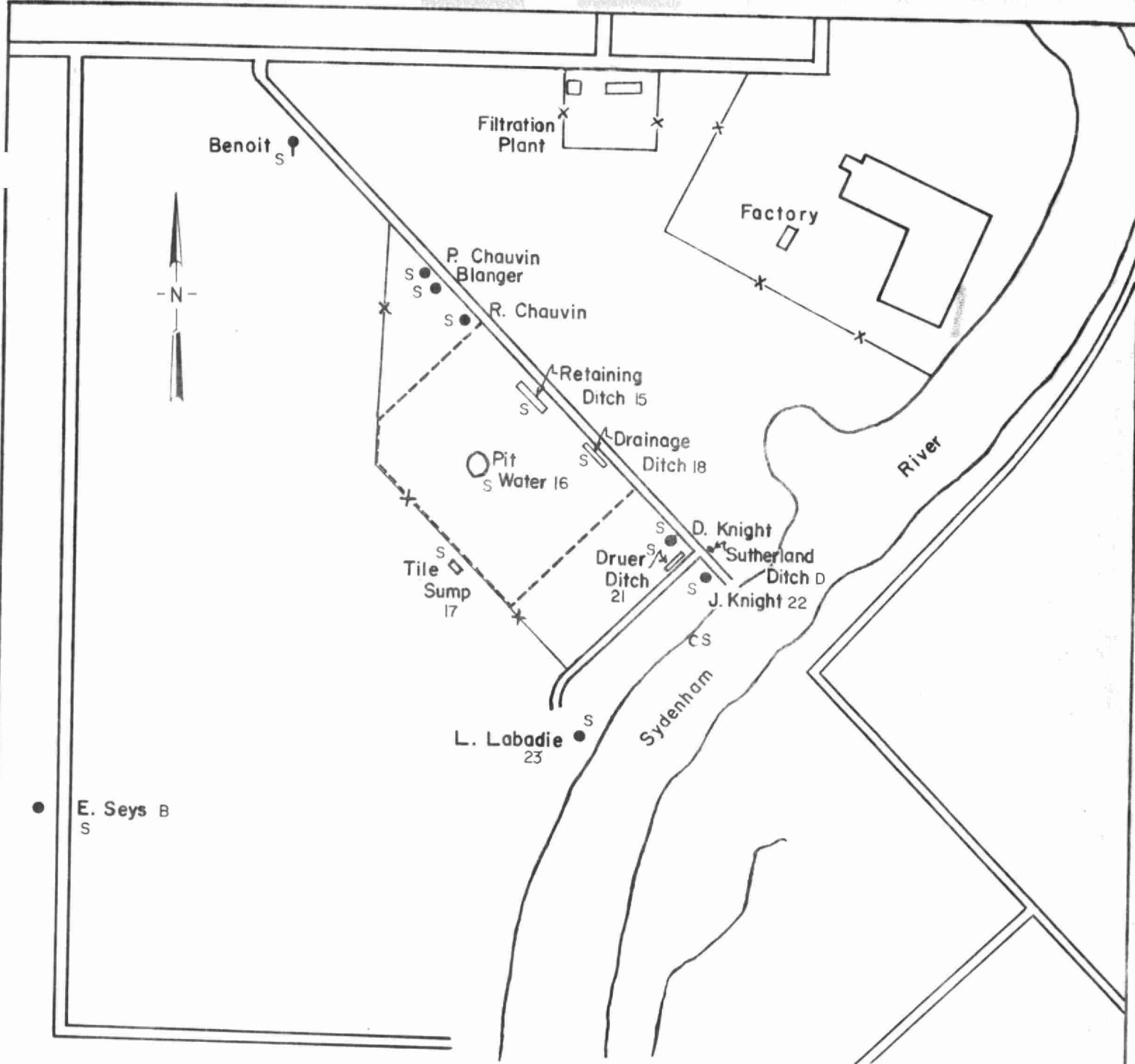
DRAWING NO.

BY: SS

FRC

1 in = 0.4 mi

FIGURE 1



LEGEND

- Drilled well in overburden
- ⦿ Drilled well in bedrock
- S Sample location
- Sanitary landfill site

ONTARIO WATER RESOURCES COMMISSION

Town of Wallaceburg

Ground Water Pollution Investigation
Sanitary Landfill Site
Additional
Sampling Points

DATE: OCT 71

SCALE:

DRAWING NO.

BY: SS FRC

1 in = 0.1 mi

FIGURE 1A

CONCENTRATIONS IN EPM

22
1876
1878
23
1881
1875
1456
1872
1877
1892

Cl SO₄ HCO₃

ONTARIO WATER RESOURCES COMMISSION

Town of Wallaceburg
Ground Water Pollution Investigation
Sanitary Landfill Site
Schoeller Plot of
well waters near landfill site

DATE: OCT 71

SCALE:

DRAWING NO.

BY: BM FRC

FIGURE 2

Ca

Mg

Na+K

CONCENTRATIONS IN EPM

1867
25
2523
2516
1870
1864
1435
1452
1408

Cl SO₄ HCO₃

ONTARIO WATER RESOURCES COMMISSION

Town of Wallaceburg
Ground Water Pollution Investigation
Sanitary Landfill Site
Schoeller Plot of
well waters distant from landfill site

DATE: OCT 71

SCALE:

DRAWING NO.

BY: BM FRC

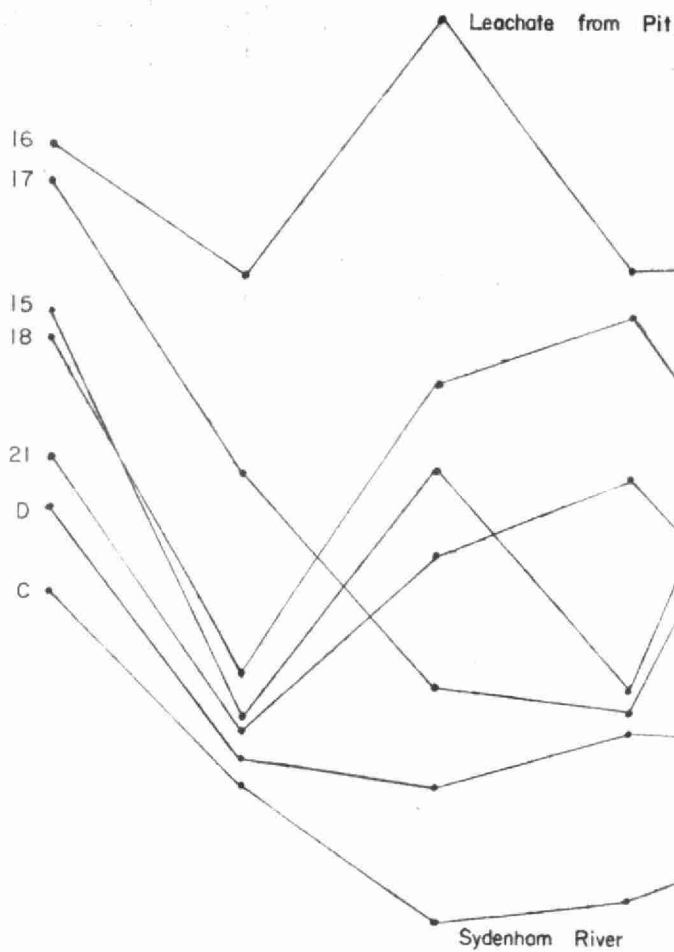
FIGURE 3

Ca

Mg

Na+K

CONCENTRATIONS IN EPM



Cl SO₄ HCO₃

ONTARIO WATER RESOURCES COMMISSION

Town of Wallaceburg
Ground Water Pollution Investigation
Sanitary Landfill Site
Schoeller Plot of
surface waters - vicinity of landfill site

DATE: OCT 71

SCALE:

DRAWING NO.

BY: BM FRC

FIGURE 4

Ca

Mg

Na+K



THE
ONTARIO WATER RESOURCES
COMMISSION

